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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,459	04/19/2001	Hiroshi Izawa	35.C15313	6750
5514	7590	09/02/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			ZERVIGON, RUDY	
30 ROCKEFELLER PLAZA				
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			1763	

DATE MAILED: 09/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/837,459	Applicant(s) IZAWA ET AL.	
	Examiner Rudy Zervigon	Art Unit 1763	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 June 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 5-26 is/are pending in the application.
- 4a) Of the above claim(s) 7-12 and 17-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6 and 13-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some    \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Group I, claims 1-6, and 13-16 in the reply filed on June 18, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Claim Rejections - 35 USC § 102***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 2, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamasaki, Hideaki et al (US 20030037730 A1). Yamasaki teaches:
  - i. A deposited-film formation apparatus (Figure 1; [0016]) comprising: an inside-evacuatable chamber (10; Figure 1; [0046]); a gas feed piping (12; Figure 1; [0046]) for feeding a material gas into the chamber (10; Figure 1; [0046]); an evacuation means (26; Figure 1; [0051]) for evacuating the inside of the chamber (10; Figure 1; [0046]); a first evacuation piping (36; Figure 1) which connects the chamber (10; Figure 1; [0046]) and the evacuation means (26; Figure 1; [0051]); and a second evacuation piping (34; Figure 1), with a piping connection part (90° elbow; Figure 1), for guiding evacuation through the evacuation means (26; Figure 1; [0051]), wherein, the deposited-film formation apparatus (Figure 1; [0016]) has a temperature sensor (64; Figure 4; [0084] – 28; Figure 1), and the temperature sensor (64; Figure 4; [0084] – 28; Figure 1) is provided on the downstream side of the piping connection part (90° elbow; Figure 1), as claimed by claim 1

Art Unit: 1763

Applicant's additional claim limitation of a "temperature sensor which detects the heat of reaction that is generated when the material gas fed into the chamber reacts with oxygen contained in air having entered from the outside of the deposited-film formation apparatus" is a requirement of intended use. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto , 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02). That Yamasaki's temperature sensor (64; Figure 4; [0084] – "thermocouple") measures heat (by definition), a heat "of reaction" is indistinguishable from other heats especially when the claim 1 "heat of reaction" is between an unknown reactant of "the material gas" and oxygen. Further, that Yamasaki's temperature sensor (64; Figure 4; [0084] – "thermocouple") is capable of measuring a "heat" of reaction is provided by Yamasaki:

“

[0084] A thermocouple 64, i.e., a temperature sensor, is detachably attached to the trap body 56. The thermocouple 64 has an output terminal connected to a heater power controller by a wire 66. Power is supplied from the heater power supply circuit to the built-in heating coil 54 embedded in the heater body 52 to generate heat by the heater coil 54. Heat generated by the heater coil 54 is transferred through the heater body 52 to the trap body 56 to heat the trap body 56 and the trapping plates 60. The heater power controller controls power supply to the heating coil 54 so

Art Unit: 1763

that the temperatures of the trap body 56 or the trapping plates 60 coincide with a predetermined reaction temperature or a predetermined trapping temperature.

“

- ii. The deposited-film formation apparatus (Figure 1; [0016]) according to claim 1, wherein the temperature sensor (64; Figure 4; [0084]) is provided at the evacuation piping, as claimed by claim 2 – Yamasaki:

“

[0078] FIG. 4 shows a trapping device in a first embodiment according to the present invention suitable for use as the high-temperature trapping device 28.

“

- iii. A vacuum system comprising: a chamber (10; Figure 1; [0046]); a gas feed means for feeding a gas into the chamber (10; Figure 1; [0046]); and an evacuation means (26; Figure 1; [0051]) and an evacuation piping (34, 36; Figure 1) by and through which the inside of the chamber (10; Figure 1; [0046]) is evacuated, wherein, the vacuum system has a temperature sensor (64; Figure 4; [0084]), as claimed by claim 16 –

Applicant's additional claim limitation of a “temperature sensor which detects the heat of reaction that is generated when the material gas fed into the chamber reacts with oxygen contained in air having entered from the outside of the deposited-film formation apparatus” is a requirement of intended use. Further, it has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (Walter , 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art

in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963); MPEP 2111.02). See above.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 3, 5, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamasaki, Hideaki et al (US 20030037730 A1) in view of Carlsen, Kurt A. et al. (US 6,155,289 A). Yamasaki is discussed above. Yamasaki does not teach:
  - i. Yamasaki's deposited-film formation apparatus (Figure 1; [0016]) according to claim 1, wherein Yamasaki's temperature sensor (64; Figure 4; [0084]) is provided on the side downstream to Yamasaki's evacuation means (26; Figure 1; [0051]), as claimed by claim 3
  - ii. Yamasaki's deposited-film formation apparatus (Figure 1; [0016]) according to claim 1, which has a leak judgment means which judges the occurrence of a leak on the basis of a measured value of Yamasaki's temperature sensor (64; Figure 4; [0084]), and a feed-gas feed control means which stops the feeding of material gases upon detection of a leak by the leak judgment means, as claimed by claim 5
  - iii. a leak judgment means which judges the occurrence of a leak on the basis of a measured value of Yamasaki's temperature sensor (64; Figure 4; [0084]), as claimed by claim 13

- iv. Yamasaki's deposited-film formation apparatus (Figure 1; [0016]) according to claim 13, wherein Yamasaki's temperature sensor (64; Figure 4; [0084]) is provided in plurality, and the leak judgment means judges the leak to have occurred when the measured values of the temperature sensor (64; Figure 4; [0084]) provided in plurality increase, as claimed by claim 14
- v. Yamasaki's deposited-film formation apparatus (Figure 1; [0016]) according to claim 14, wherein Yamasaki's temperature sensor (64; Figure 4; [0084]) are provided along the flow of gas, and the leak judgment means judges the leak to have occurred when the measured values of the temperature sensor (64; Figure 4; [0084]) increase along the flow of gas, as claimed by claim 15

Carlsen teaches a leak detection system (Figure 1; column 4, lines 23-51) including:

- vi. Carlsen's deposited-film formation apparatus (Figure 1; column 1, lines 10-28), which has a leak judgment means (40; Figure 1; column 4, lines 23-51) which judges the occurrence of a leak on the basis of a measured value of Carlsen's temperature sensor (60; Figure 1; column 4, lines 23-51), and a feed-gas feed control means (40; Figure 1; column 4, lines 23-51) which stops the feeding of material gases upon detection of a leak by the leak judgment means, as claimed by claim 5

Support for "leak judgment means" is found in section [0025]. Specifically, the specification teaches:

“

The present invention still further provides a leak judgment method comprising the steps of feeding a reactive gas to the inside of a vacuum system having a chamber and an evacuation

Art Unit: 1763

pipng, measuring temperature of the vacuum system at a plurality of spots thereof, and judging the occurrence of a leak on the basis of a change with time of a plurality of measured values obtained by measuring the temperature.

“

Carlsen teaches a leak judgment method comprising the steps of feeding a reactive gas (14; Figure 1) to the inside of a vacuum system having a chamber (50) and an evacuation piping (54), measuring temperature (60; Figure 1; column 4, lines 23-51) of the vacuum system at a plurality of spots thereof, and judging the occurrence of a leak on the basis of a change with time of a plurality of measured values obtained by measuring the temperature - column 4, lines 23-51. As such, Carlsen teaches an equivalent apparatus that performs the function of leak detection. As a result, Carlsen's prior art elements of 50, 54, and 60 for leak detection perform the identical function of leak detection in substantially the same way, and produces substantially the same results as the corresponding elements disclosed in the specification (MPEP 2183).

- vii. a leak judgment means (40; Figure 1; column 4, lines 23-51) which judges the occurrence of a leak on the basis of a measured value of Carlsen's temperature sensor (60; Figure 1; column 4, lines 23-51), as claimed by claim 13
- viii. Carlsen's deposited-film formation apparatus (Figure 1; column 1, lines 10-28) according to claim 14, wherein Carlsen's temperature sensor (60; Figure 1; column 4, lines 23-51) is provided along the flow of gas (26, Figure 1), and the leak judgment means (40; Figure 1; column 4, lines 23-51) judges the leak to have occurred when the measured values of the temperature sensor (60; Figure 1; column 4, lines 23-51) increase along the flow of gas, as claimed by claim 15



It would have been obvious to one of ordinary skill in that art at the time the invention was made to add Carlsen's leak judgment means to Yamasaki's down-stream piping (38; Figure 1) including adding plural temperature sensors.

Motivation to add Carlsen's leak judgment means to Yamasaki's down-stream piping including adding plural temperature sensors is to prevent system gas line leaks as taught by Carlsen (column 4, lines 28-51). Further, it is well established that the duplication of parts is obvious (In re Harza , 274 F.2d 669, 124 USPQ 378 (CCPA 1960) MPEP 2144.04).

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamasaki, Hideaki et al (US 20030037730 A1) in view of Saitoh, Keishi et al. (US 5,417,770 A). Yamasaki is discussed above. Yamasaki does not teach the deposited-film formation apparatus (Figure 1; [0016]) according to claim 1, which has the chamber (10; Figure 1; [0046]) in plurality and a means for moving a belt like member continuously through the insides of the chambers in their lengthwise direction.

Saitoh teaches plural chambers (2002, 2031, ...; Figure 20) including means for moving a belt like member (2004-2007; Figure 20).

It would have been obvious to one of ordinary skill in that art at the time the invention was made to reproduce Yamasaki's deposited-film formation apparatus (Figure 1; [0016]) and add Saitoh's means for moving a belt like member.

Motivation to reproduce Yamasaki's deposited-film formation apparatus and add Saitoh's means for moving a belt like member is to produce photovoltaic devices by CVD as taught by Saitoh (column 1, lines 20-25).

*Response to Arguments*

6. Applicant's arguments filed June 18, 2004 have been fully considered but they are not persuasive.

7. Applicant states, with respect to Yamazaki, that:

“

since the trap (including an evacuation piping) is temperature-controlled, a temperature rise caused by a leak cannot be detected.

“

The Examiner disagrees. Yamazaki's temperature sensor (64; Figure 4; [0084] – 28; Figure 1), regardless of the temperature controlled nature of its surroundings, can detect temperature rises and temperature reductions resulting from leaks or any other process condition causing temperature fluctuations.

8. In response to applicant's argument that Yamazaki's sensor cannot measure temperatures in a lower range (last paragraph, page 14), a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In particular, Yamazaki's temperature range of 180°C to 300°C is for heating the trapping plates 60 and is not described as comprehensive temperature range of Yamazaki's sensor. Further... In response to applicant's argument that the references fail to show certain features of

applicant's invention, it is noted that the features upon which applicant relies (i.e., that Yamazaki's sensor cannot measure temperatures in a lower range (last paragraph, page 14)) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

9. The remainder of Applicant's arguments are directed to the amendments filed in response to the prior non-final action. Applicant is referred to the above new grounds of rejection.

#### ***Conclusion***

10. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (571) 272.1442. The examiner can normally be reached on a Monday through Thursday schedule from

Art Unit: 1763

8am through 7pm. The official after fax phone number for the 1763 art unit is (703) 872-9306.

Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (571) 272-1700. If the examiner can not be reached please contact the examiner's supervisor, Gregory L. Mills, at (571) 272-1439.

*Pro. Sheng*  
8/31/4